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PREHISTORIC GEOGRAPHY

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Fascinating as it is, the geography of the present is far less attractive than the geography of the past. In studying a modern region, for instance, we already know the facts—the areas of densest population and so forth—before we begin work. But before we can begin to generalize geographically about such a region as it was during some prehistoric period, the facts have first to be discovered, collected, classified, and mapped. It is not until this preliminary—and very laborious—research has been accomplished, that the archeologist is in a position to study the geographical aspect of his chosen period. Neither of these tasks can profitably be carried out by amateurs. Only long practice in the field can qualify for the delicate business of selection; and it is only by the informed imagination of the specialist that the distribution map can be adequately interpreted. This map is the goal of the whole undertaking, and its explanation in terms of geographical influence is one of the finest intellectual pleasures that exist.

THE GEOGRAPHIC FACTOR IN THE DETERMINATION OF ANCIENT SETTLEMENTS AND TRADE CENTERS

The geographical features which emerge from such research are of two kinds. In the first place, and this is especially the case in dealing with prehistoric times, the facts whose distribution has been mapped fall into a number of distinct groups, which indicate the chief settlement areas of the period. In the second place the distribution indicates the existence of certain "nodal" points, many of which have now lost their nodality through a change in the nature of the control.

Let me take as an illustration the changes which have taken place in the distribution of population in England and Wales since the New Stone Age. We know from the distribution of Long Barrows that at the close of the Neolithic period, the uplands of the Cotswolds and the bare chalk downs of Wiltshire and Dorset were the most thickly inhabited regions of Southern England; and from the close association of these remains with springs and streams we can infer—what was obvious on a priori grounds—that within these regions the population clustered more thickly round those regions where water was easily accessible. Only by such a common sense hypothesis can we explain the existing distribution and, what is equally striking, the small bare patches (still within the group area) where Long Barrows are absent.

Influence of the Geological Formation and the Water Supply

In the above instance two controlling factors can be discovered. The control of the groups as a whole is indirectly geological; primitive man selected those regions which were free from dense forest and marsh and which also provided good open pasture land to graze his flocks and herds upon. Graphically it may be expressed thus:

Geology→vegetation→domesticated animals→man.

Altitude may also exercise a controlling influence, as it does in the Welsh mountains. The second control is exercised *within* the group area by the universal need of water for man and beast.

A study of distributions during the succeeding period shows that in the main the same régime obtained. That was to be expected since the discovery of metal did not for a long time to come affect the fundamental needs which regulate social life. But the use of metal implements coincided with, and was no doubt partly the cause of, a great development of trade. The inhabitants of areas devoid of metal ores demanded, and were prosperous enough to pay for, such valuable tools; and their distribution reveals, outside the great settlement areas, little groups of finds at points of geographical importance. Among such are the harbors, especially those at the mouths of rivers whose valleys were a natural avenue of approach to the inland settlement areas. It is here that we see most clearly the different working of the geographical factor in past and present.

Examples of Ancient British Ports

In the Bronze Age, if not before, the principal ports on the southern coast of England were at Bitterne on the eastern shore of the Itchen estuary in Hampshire, at Christchurch in the same county, and at Weymouth. Warrington, near the mouth of the Mersey, was also an important port. Of these four sites the first is still important, but the settlement is now concentrated at Southampton on the western shore of the Itchen; the second, Christchurch, has ceased to be a port; the third, Weymouth, occupies a spot probably to the north of the original settlement and is of far less *relative* importance than its prehistoric predecessor; and the fourth, at Warrington, has been superseded by the port at Liverpool farther down the river. Now of these four we may perhaps select Christchurch and Weymouth as the most important in prehistoric times, because they were the natural outlets of two of the largest and then most thickly inhabited regions —Salisbury Plain and Dorset. The people of these regions could obtain metal implements only by exchanging them for products of their own fertile districts; land communication being difficult and hazardous, we should naturally expect to find that sea routes predominated, and that the ports of call were those nearest to the region of the buyers. That is what the evidence of distribution does in fact suggest in a way that amounts almost to proof. We may go so far as to say that the raw metal was exported, from Cornwall or Brittany or both, to Southampton and probably also Christchurch and was there smelted on the spot and cast into molds for axes. Positive evidence (still unpublished), consisting of the discovery of a crucible with bronze axes near Southampton, places this conclusion beyond doubt; and as a matter of fact the writer had arrived at it before this crucible was known to him, from the discovery in the same neighborhood of several "hoards" of bronze axes, newly cast and ready for transport to the inland marts. Closely allied to this discovery is that made at Hengistbury Head, within the area of a prehistoric camp, where remains of iron smelting were found. Their exact age is a little uncertain, and they belong of course to a later date than the bronze axes; but abundant relics of the Early Iron Age were found there, and we may safely assume that Hengistbury, which is less than a mile from Christchurch and at the mouth of the Salisbury Avon, was the port through which the people of Salisbury Plain obtained their iron implements before, and possibly during, the Roman occupation.

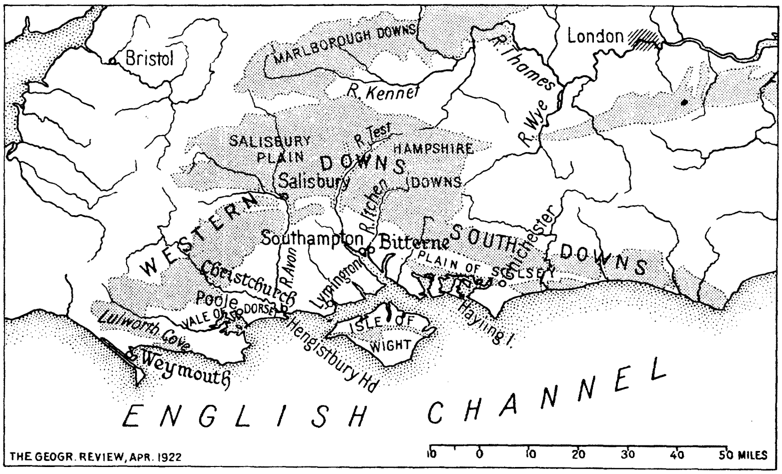

FIG. 1—Map of a part of southern England showing the site of three important ports of the Bronze Age (in antique lettering) in relation to the hinterland. The open chalk upland (shaded) was the seat of the densest population. Compare with the map of the habitable area of southern Britain in Neolithic time by H. J. Fleure, *Geographical Review*, Vol. 5, 1918, p. 219.

PORTS AS DETERMINED BY "EFFECTIVE HINTERLAND"

What were the causes which made Christchurch and Warrington, for instance, so much more important in the past than they are now? The increase in the size of ships is not the only one which has operated. Had this been the sole factor we should find it difficult to explain the absence of finds round other "shallow-draught" harbors like Poole and Chichester.

The main factor which determined the selection of ports in prehistoric times was *the presence of a populous hinterland of effective buyers.* The port most accessible to that hinterland was bound to become the gateway through which imported goods entered it. Christchurch was the port of Salisbury Plain, and the broad gravel terrace of the lower Avon valley was its road of approach. Similarly Warrington was the port nearest to that island of population in the Peak District of Derbyshire and the one through which the copper of Ireland was probably obtained. It may also have derived importance from being an important halting place on a trade route between Ireland on the west and Scandinavia on the east.

In both these instances the determining factor is a reduction to a minimum of the land journey. It was this which caused Warrington and not Liverpool to be selected; if you could sail up as far as Warrington and thereby save several miles of land journey, you would certainly have done so in prehistoric times. A mile of sailing up an estuary was as nothing compared with the same distance on land, even if you did not actually carry the heavy ore on your own back (which you or your customers probably did).

Nowadays roads and railways have so altered land communication that a few miles makes no difference. But we may see the same principle—which may be called for short that of the *effective hinterland*—in operation just the same. Good natural harbors, like that of Kingsbridge in Devon, are of little commercial importance because they lead nowhere—neither to population nor natural wealth; but where these exist, as round Manchester, Leith, and Glasgow, artificial harbors have had to be made, or natural ones enlarged, by dock construction, canalization, and dredging.

Causes for Shiftings of Relative Population Densities

But to hark back to the first point, why is it that the settlement areas—that is to say, the regions of densest population—of one period are different from those of another? It is because man, in his rôle of parasite, draws his sustenance now from one host now from another. The ultimate host is always the soil which produces vegetation which supports food-animals; but men may pay other men, in other lands, to supply them with these necessities. In prehistoric times the parasitism was direct; men lived on the country they dwelt in. Consequently the regions most thickly inhabited were those of great *natural* fertility, by which is meant regions immediately open to pasturage and agriculture without much initial expenditure of labor in clearing. The fertility of forest regions may ultimately prove greater, but it is at first potential only and needs much labor to develop. In prehistoric times, therefore, forest regions were relatively thinly populated. Nowadays, though we still live mainly on bread and meat and vegetables, we do not grow enough of these to support the whole of our population. We do not need to, because we can obtain these necessaries in exchange for coal and all the variety of manufactured articles we produce through its energy. The world-wide demand both for coal itself and for those manufactures which are directly dependent upon it—in short, its general indispensability, unchallenged for a hundred years—has caused in that same short period a shifting of population almost without parallel in any country at any past period. Speaking very broadly, and excluding large towns, it may be said that few sudden changes took place in the distribution of population from the New Stone Age down to the beginning of the nineteenth century.

The most revolutionary change was made by the Anglo-Saxon invaders who deliberately chose to settle in the valleys instead of upon the high downs where the Romano-British and all their predecessors had had their encampments. But even they did not select their regions for any other reason than that of their potential food value; and the chalk regions, as usual, were the favorites. Such changes as took place from then onwards were of the nature of reclamation of wild land; but this process was gradual and did not amount to much in quantity, nor did it cause existing centers of gravity to shift appreciably.

It is a truism that the areas of densest population now coincide with coal fields; it will soon be recognized as a truism that in early prehistoric times they *generally* coincided with limestone areas—chalk, oolite, and carboniferous.

The Geographic Factor in Archeological Method

I have emphasized the geographical influence and its shiftings because that is likely to be of most interest to geographers. To the archeologist, however, it is not so much the fact of the influence as the particular regions in which it expresses itself that matters. The whole subject is in its infancy, and there are many discoveries of the first importance to be made when archeologists realize the value of this method of study. I know of nothing so enthralling as to watch laboriously collected facts gradually sorting themselves out into homogeneous groups. The pleasure is the greater if, as often happens in prehistoric archeology, the individual facts themselves have not previously been recognized as akin. For instance, at the present moment I am engaged in compiling a descriptive list of the Chambered Long Barrows of Southern England. With the exception of two counties[1] no list of any kind existed, and it was necessary to start *ab initio*. In the course of field work many unrecognized and many entirely new examples were found, and the general kinship of all units forming this large group gradually became evident. In the light of experience it became possible to give an intelligible account of many isolated monuments of this class whose real nature had not previously been recognized. This marks the first stage, of collection and classification of instances. The second consists in plotting the sites on a map and examining their distribution. When this simple task of mapping is accomplished, one's first act is to superimpose a geological map and to see whether the formations where the sites cluster have any common traits. In the distribution of Long Barrows, as has been hinted above, the common trait is their occurrence upon some kind of limestone, especially near streams and springs. If, as may reasonably be concluded, the distribution of these tribal burial places is a clue to the past distribution of the living members of the tribes, we can proceed to form some tentative generalizations. We can proceed further than this; we can *foretell* that in other regions where similar conditions obtain, Long Barrows or other remains of these people will some day be brought to light; and this raises archeology very nearly to the level of an exact science.

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[1] Gloucestershire, by G. B. Witts in 1883; and Wiltshire, by Mrs. Cunnington in 1914, the latter being by far the better of the two.

I say "foretell;" the facts may be unknown to science, that is to say they may be unrecorded and known to a few persons only; or they may be entirely unknown. In either instance it amounts to prophecy in the scientific sense if their occurrence in the region in question is unknown to the foreteller. Let me give an instance. Before any excavations at all had been made or contemplated at Hengistbury Head I felt sure that the site was one of the first importance, for reasons which have already been given. Unfortunately I did not record my opinion on paper; but I came very near doing so when I said in 1912 that Christchurch was the port through which the gold of Ireland, so abundant in Wiltshire, must have passed.[2] And, as a matter of fact, the discovery in a round barrow at Hengistbury of a gold button case and other objects of a type common in Wiltshire but rare elsewhere, goes far to prove my contention.

It may reasonably be demanded that this claim to prophecy be justified here and now by concrete examples. I take up this imaginary challenge and give below the kinds of sites, with some specific instances of actual places where I anticipate that discoveries of prehistoric finds will be made or, if already made, will be found, when their distribution is mapped, to cluster most thickly. These prophecies are based on a few already known instances which appear to obey some law of universal application. In the present state of geographical archeological research such prophecy is still possible. That the subject is still in its archaic period is proved by the rarity and the primitive character of archeological maps.

1. *Drift implements of the Paleolithic period.* That these occur most frequently on the fork between the junction of two rivers has already been pointed out by Sir John Evans. They will also be found to occur, I believe, wherever the river which deposited the gravel in which they are found passes from the chalk into Tertiary country, and usually on the "chalk side" of the boundary.

2. *Neolithic implements.* Gravel islands in the marsh of a river valley and gravel promontories or banks by the side of a river (especially in Tertiary

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[2] O. G. S. Crawford: The Distribution of Early Bronze Age Settlements in Britain, *Geogr. Journ.*, Vol. 40, 1912, pp. 184–203 and 304–317; reference on p. 196.

country) will be found very prolific in "flint fields." Generally speaking, the combination required is inaccessibility and ease of defence against man and wild animals, with a handy and abundant water supply.

3. *Bronze implements.* Wherever a navigable river or an estuary impinges *directly* upon the bare chalk, with no intervening strip of alluvial marsh, there I confidently expect a small dense cluster of find-spots on the map. Similar clusters are to be expected wherever the shores of such navigable rivers and estuaries are formed by gravel or other hard ground. Places of both kinds are abundant on both shores of the Thames estuary and occur also near the mouth of the Medway, the Cambridgeshire Ouse, and the Humber. Experience already shows that the majority of hoards occur near the seacoast; the probable reasons for this have been given above.

4. *Earthworks.* It is natural to suppose that people who lived within easy access of the sea or near the mouth of a navigable estuary would become the middlemen of trade between the interior and foreign ports. Their culture would contain a vigorous element of industrialism. They would be richer in objects made of imported materials than the agricultural and pastoral inhabitants of the hinterland. Their society would be urban rather than rural—I use the words in a half metaphorical sense only. Consequently those prehistoric camps and village sites which were thus favorably situated will better repay excavation than would those in remoter regions.[3] A site with geographical nodality will contain more remains; and it is probable on a priori grounds that amongst these may occur many exotic types introduced from abroad. Such types will prove invaluable both for purposes of chronology and for tracing the origin of a given culture. Another good reason for selecting coastal sites is that here we should expect to find the earliest settlements of an invading race, and consequently here will be found relics of the older culture associated with relics of the new incoming people. This again will be of great chronological value.

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[3] If I were asked to give a few instances of places that would best repay excavation I should select (taking examples only from a region which I know) Bindon Hill above Lulworth Cove in Dorset; Buckland Rings and Ampress Hole near Lymington, Hants; Chilworth Ring and the camp on Toothill near Southampton; Tourner Bury Camp on Hayling Island; and perhaps one or two of the camps on the South Downs of Sussex.